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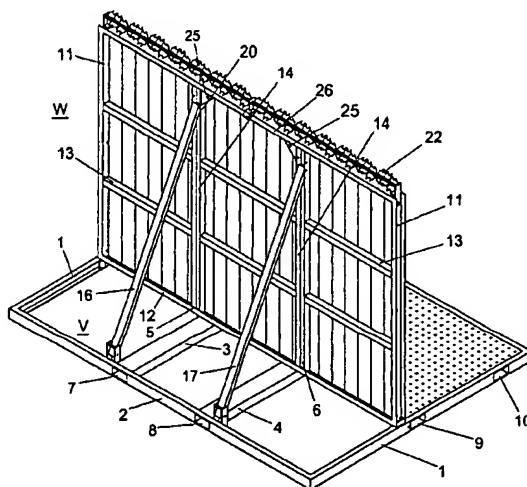
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(54) Title: TRANSPORTABLE SAFETY MODULE CONSTRUCTION



(57) Abstract: This invention relates to an easily transportable safety module construction in its folded-down position. It comprises of a principally right angled horizontal floor frame construction (V) for positioning on the ground. Upon this floor frame construction there is provided an upright and relatively high closed wall construction (W) protected against clamper up as a safety frame to keep the public at a safe distance from an object. Further the height and the width of the upright wall construction (W) are of such dimensions that in the disassembled position of the safety module, in other words, when both frames (W, V) are positioned completely flat lying down upon each other, that the lengths and the widths of the horizontal floor frame construction (V) and of the upright wall construction (W) nearly correspond to each other in its dimensions.

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Transportable safety module construction.

This invention relates to a transportable safety module construction which in folded down position is easily transportable and may be used for screening off certain objects. For that purpose up till now so called building fences are used, among others for screening off buildings like embassies or for screening off terrains where events are taking place. Building fences however have the disadvantage of not being stable, light of weight and easily deformable in case high security requirements are desired.

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Object of the invention is a transportable stable safety construction of sufficient height and thus also resistant to undesired clambering over by persons, but which construction being also highly stable by the fact that it occupies a large ground surface and also for storing of great numbers being easily foldable down and thereby occupying little space in that position. The safety module construction is further provided on both sides with intercoupling means enabling a closed front to be constructed from a number of intercoupled modules, so that an object to be secured may be completely surrounded by a closed line of wall modules.

20 The construction of a safety module principally consists of a relatively heavy rectangular horizontal floor frame construction of such a large surface that possible tilting thereof is inconceivable. The dimensions of the floor frame are at least 350 cm by 255 cm (length x width). On top of the longitudinal centre axis of this floor frame an upright wall construction or safety frame is positioned with a height of approximately 250 cm. This wall may be entirely closed so that no view through exists to the opposite side thereof. Moreover to reduce the zest of persons for clambering over, the invention provides in an extra safeguarded top edge along the full length of the wall construction by the application of sharply pointed anti clamber elements.

30 The outlined edges of every separate frame for the floor and the wall may consist of relatively heavy L- or U-shaped profile beams or hollow profile beams, dependent how it will fit in the construction for optimal safeguarding. Between the

5 aforesaid beams usual reinforcement profile beams may be provided for. The wall may consists of one piece of sheet material but it may also consists of separate adjacent wall profiles shaped as panel segments which may be horizontally or vertically joined together into a closed wall, thereby e.g. framed into a fitting U-shaped profile.

10 If the upright wall construction is positioned permanently all around an object to be protected the frame may be welded or not onto the floor frame or fixed thereto by some other means and supported by two or more shores which are located at the rear side of the wall construction to provide for the required stability and security to the wall construction. However, if the safety module construction is transported frequently from a storage depot to an object to be protected it is desirable to use an easily manageable design, which is easily stackable and so occupies little space. Preferably the safety module is provided with means which facilitate the
15 folding up and down of the wall construction and/or provided with means which interlock the wall construction in its mounted position.

20 Other embodiments of the safety module construction are described in the claims and the invention will now be further explained by means of an example of an embodiment.

- Fig. 1 is a perspective rear view of the safety module construction according to the invention;
- 25 Fig. 2 is a perspective front view of the safety module construction according to Fig.1;
- Fig. 3 shows a side view of this safety module construction;
- Fig. 4 shows a detail of the extra safeguarded top edge of the vertical frame wall;
- 30 Fig. 5 shows a side view of the safety module construction of Fig.3 in folded down position;

Fig. 6 is a perspective top view of the safety module construction in folded down position with the guide element on the wall construction and a guide channel formed in the floor frame;

Fig. 7 is a perspective side view of the safety construction according to Fig.6 showing the guide wheel of the wall construction engaging the guide rail on the floor frame;

Fig. 8 shows a perspective view of the safety module construction version in disassembled position together with a shore which for its major part is received in a reinforcement profile;

Fig. 9 shows in a rear view a detail of two intercoupled safety module constructions with wall constructions having a smaller width than the floor frame and

Fig. 10 shows in front view a detail of two safety module constructions with two guide wheels which are received in recesses in the guide rails.

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In Fig. 1-4 the rectangular shaped floor frame V consists of a number of interwelded U-shaped profile beams 1 and 2 and of some hollow reinforcement beams 3 and 4. At the position where these hollow reinforcement beams 3 and 4 are interconnected by welding to the profile beams 1 and 2 rectangular openings 7 and 8 are formed. In these openings 7 and 8 the forks of a fork-lift truck may be inserted for transport of the floor frame V. Also in the short rectangular sides of the floor frame V similar recessed openings 9 and 10 are provided. On the longitudinal central axis of this floor frame a vertical wall construction W is positioned, having a width which being equal to the floor frame V. The wall construction W consists in this embodiment of a rectangular frame of circumferential profiles 11, 12 and 26 between which are provided welded horizontal and vertical reinforcement profiles 13 and 14. On the front side of the circumferential profiles the wall construction is covered by a closed surface, in this example comprising a number of vertical panel segments 15 of profile steel plate joined together and forming the safety wall construction W. If desired for weight reduction the panel segments 15 may be manufactured from aluminium material. The panel segments 15 may be framed in a U-shaped profile and subsequently the

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framed profile may be totally welded upon the upright wall construction W. There are several other technical options to mount parts of the closed wall, e.g. by spot welding or by means of mounting with bolts. In order to secure the vertical position of the wall construction on its rear side two shores 16 and 17 are mounted. If no

5 hinged connection with the wall construction W is intended, then the ends of the shores 16 and 17 may be fixedly welded. For the embodiment shown in Fig. 1-10 a movable connection has been chosen between the wall construction W and a circumferential edge profile 2 of the floor frame V. This connection consists of a hinged connection 18 between the base of the shores 16 and 17 with an upright

10 profile part 19, connected with the horizontal profile beam 2, e.g. by welding. This hinged connection 18 may be formed by a detachable bolt connection. Shores 16 and 17 are at their upper end also connected by a hinged connection 20 to the vertical frame reinforcement profiles 14. The horizontal bottom part 12 of the wall construction W may be fixedly secured to the floor frame V by means of e.g. a bolt

15 connection. A similar bolt connection may be mounted adjacent to the bottom ends 5 and 6 of the vertical profiles 14. On the top side of the floor frame V an optionally perforated steel sheet S is attached as cover. Preferably a completely closed sheet is used like a "tear-plate" in order to make the upper side of the safety module construction inadmissible for malevolence persons.

20 As shown in Fig.9 it may be desirable during positioning and joining of a row of adjacent safety module constructions upon an irregular non-horizontal surface to allow for a mutually distant space between the wall constructions (W, W') with a distance of e.g. 5 cm. This space may be filled later with sheet strips (not drawn) of the same height as of the wall construction.

25 The safety module construction may be constructed in an alternative embodiment as a permanent upright wall construction, so that no means for downward folding are needed, whereas its transportability is still possible. Another more practical embodiment enables the foldability down of the construction into a rectangular package of the floor frame with on it top of it the wall construction; the package

30 having a total height of approx. 20 cm.

Fig. 1, 3, 5 and 8 show how the frame parts W and V make it possible to be transported in a folded down position by use of openings 9 and 10 provided for in

the floor frame for the forks of the fork-lift truck. By disassembling one or more of the bolt connections 21 between two adjacent safety module constructions, e.g. a bolt and a nut which optionally also may serve as a locking element, the bottom part of the wall construction W in Fig.1 and 3 may be displaced to the left allowing the wall construction to be flatly positioned upon the floor frame V. The resulting total height of the floor frame and the wall construction will be no more than 2 x 10 cm so that the stackability of a great number of safety modules is ensured and subsequently will thus occupy little storage space.

Fig.5 shows a preferred embodiment of the safety module construction, the hinged shores 16, 17 being completely received in the wall construction W so that the safety module construction in its disassembled position comprises on its top surface no parts of the shores 16, 17 extending outside the framework of the edge profiles, so allowing the disassembled safety module constructions easily stackable, e.g. for transport.

In Fig.1 and 8 another embodiment is shown, in which the shore 16 for its major part is received in the hollow space of a U-shaped reinforcement profile 14. As a result the shore 16 is safely enclosed within the reinforcement profile 14 and will be less easily damaged or buckled during stacking upon each other or during transport.

As shown in Fig. 1, 3, 5, 8 the shore 16 hinges over a connection point 18 at its bottom part on the upright profile part 19, which point is located at some distance above the edge circumference or profile beam 2, so that the shore, from its upper end to its lower end, fittingly rests into the U-shaped reinforcement profile 14 and the shore principally parallelly extends in the same direction as of the profile 14.

Fig.5 and 8 shows that the upright profile part 19 has also the function of a locking element. Thereto in its disassembled position the safety module construction the profile part 19 will extend beyond the wall construction W with its top side into the opening or hollow space of the U-shaped profile beam of a safety module construction positioned thereupon, in order to prevent mutual displacement of interstacked safety module constructions. For the locking element many equivalent embodiments are possible like mounting of one or more locking elements on e.g.

the top circumferential profile 26 or upon the reinforcement profile 14 of the wall construction W or upon an alternative location upon the floor frame V.

5 In order to facilitate the folding up and down of the relatively heavy wall construction into its mounted and disassembled position, preferably the wall construction W is provided with additional means like e.g. hoisting eyes/hooks or guide elements.

Fig.1 shows two hoisting eyes/hooks 25 by means of which hoisting means known per se like a hoisting chain and a hoisting crane or a fork-lift truck may hoist the wall construction W allowing it to be folded up into its upright, mounted position. To
10 secure that the construction wall, in other words the bottom edge 12, during hoisting and folding up will remain principally parallel to the longitudinal central axis of the floor frame and to prevent additional torque forces in the shores, guide means are used like guide channels and guide wheels.

15 In Fig.6 a part of the floor frame V is shown with U-shaped profile beams 1 and 2 and a part of the wall construction W with the upright edge profile 11 and the lower circumferential profile 12 with interconnected by welding to guide element 27. The guide element 27 comprises a rectangular headed or hooked element 28 which extends into the guide channel 30, which in this embodiment is formed between
20 the profile beam 1 and the parallelly mounted profile beam 31. During folding up and down of the wall construction W the guide channel 30 and the guide element 27 moving therein will ensure that the wall construction W will hardly tilt with respect to the longitudinal central axis of the floor frame V. The guide means 27 may be applied to the safety module construction over the total length of the lower
25 circumferential profile 12; preferably two guide means are mounted to both ends of the bottom edge 12 near the upright edge profiles 11. The guide means may be mounted easily at that location and will so optimally prevent tilting of the wall construction W.

In order to facilitate the folding up and down of the wall construction W and in order
30 to reduce abrasive wear of the displacing parts of the safety module construction, preferably the wall construction is provided with one or more guide wheels 31, as shown in Fig.7. During the folding up and down of the wall construction W the

- guide wheels 31 roll over guide rails 32 so that the wall construction is principally supported by the guide wheels 31 because the roller surface extends beyond the framework of the edge profiles 11, 26. Preferably the bottom edge 12 of the wall construction W is provided with at least two mutually distantly spaced guide wheels 31 and of at least two mutually distantly spaced guide elements 27 and the floor frame V is provided with at least two guide rails 32 and of at least two guide channels 30. In a more sophisticated embodiment the guide wheels 31 are mounted adjacent to the guide elements 27 and accordingly the guide rails 32 are mounted adjacent to the guide channels 30, as shown in Fig. 6 and 7.
- 10 In order to support the bottom edge 12 of the wall construction W in mounted position by the floor frame recesses 33 are provided in the guide rails 32 to receive the guide wheels 31, as shown in Fig. 10. Fig. 9 shows, that the wall construction W in upright/mounted position is supported upon the profile beam 1 of floor frame V and is no longer supported by the guide wheels. These measures have further
- 15 the advantage that they do increase the safety of the safety module construction, because the wall construction W cannot easily be displaced away, or roll away, from its mounted position and subsequently fold down, because the wall construction must first be hoisted out of the recesses 33.
- Fig.3 shows, that the wall construction W in its mounted position may be locked
- 20 against folding or pushing down by persons by means of locking element 21 which e.g. is attached behind guide element 27. This locking element may be formed in an advantageous manner from the connection elements between the two adjacent floor frames V by e.g. mounting a bolt and nut connection just behind the guide element 27.
- 25 Fig.6 and 7 shows a stop element 34 positioned on the bottom edge 26 of the wall construction W which engages the longitudinal central profile when in mounted position, in order to prevent turning over or sliding through of the wall construction W. In order to lock the wall construction in its mounted position against raising or lifting up the rectangular headed or hooked element 28 of the guide element 27
- 30 may extend under the protruding edge 29 of the floor frame V, as shown in Fig.3. In the foregoing described preferred embodiment a number of features and

elements are combined, but obviously the separate, non-combined, elements and features also fall within the scope of the invention.

Storage of the safety module constructions may be done in horizontal or vertical position. In horizontal position the fork openings 7 – 10 are directly accessible for a fork-lift truck. By choosing U-shaped reinforcement profiles 14 for the wall construction W the shores 16 and 17 may be easily received into the profiles 14 in folded down position of the safety module construction. As a consequence a hinged connection may be easily realised. The height of the wall construction W may be further increased by mounting of a number of anti clamber elements 22 with sharp protruding points 23. In the shown embodiment short tube segments are provided each on their outer circumference with four sharply pointed welded steel sheet segments 23 positioned under an angle of 90°. A number of this anti-clamber elements 22 is subsequently adjacently slid over a hollow tube having the same length as the top edge 26 of the wall construction W, see Fig.4, where after the hollow tube is connected on both ends to the extended end 24 of the upper edge of the profiles 11 of the wall construction W.

While using the safety modules, on its rear side and on both sides each of the vertical circumferential profiles 11 the usual lockable interconnections may be provided in order to connect adjacent wall constructions W in a reliable way into a continuous safety wall construction. In this way a reliable and stable wall construction is obtained with exceptionally high safeguarding, whereby the visibility of an object to be protected will be out of sight for the major part because of the completely closed wall construction W on its front side.

25 Claims

CLAIMS

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1. Safety module construction being easily transportable in a folded down position consisting of an essentially right angled horizontal floor frame construction (V) for positioning on the ground, provided with a upright relatively high safety frame mountable thereupon forming a wall construction (W), for keeping the public at a safe distance from an object, whereby the height and the width of the upright wall construction (W) in a mounted position projecting above the horizontal floor frame construction (V) comprises such dimensions, that in disassembled position of the safety module, in other word as both frames (W,V) are positioned completely down upon each other, the lengths and the widths of the horizontal floor frame construction (V) and of the upright wall construction (W) nearly mutually correspond in their overall dimensions.
2. Safety module construction according to claim 1, characterized in that each individual frame (V,W) of the safety module construction consists of a framework closed in itself of interconnected metal edge profiles (1,2,12,26) which may be provided or not with reinforcement profiles (3, 4, 13, 14) positioned between the edge profiles.
3. Safety module construction according to claim 2, characterized in that the rear side of the upright wall construction (W) with respect to the floor frame (V) is shored by at least one shore (16, 17) positioned under an angle, whereby the top end is connected to the top side of the wall construction (W) and whereby the bottom end of the shore is connected to the floor frame (V) adjacent to the rear edge profile (2).
4. Safety module construction according to claim 3, characterized in that a shore with its top and bottom side is hinged connected to the wall construction (W)

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and the floor frame (V) respectively, e.g. by means of detachable bolt connections means so that the wall construction may be folded up- and downwardly into its mounted and disassembled position respectively, without the necessity for mounting or disassembling the shore.

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5. Safety module construction according to claim 4, characterized in that the wall construction (W) may be flatly positioned down with its front wall side upon the floor frame (V) by disassembling the bottom edge (12) of the wall construction and remove it to the rear side of the floor frame (V), whereby no disassembling of the shore (16, 17) takes place while it hinges around a connection point (18) which is located at some distance (19) above the edge circumference of the floor frame (V) .

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6. Safety module construction according to claim 5, characterized in that the wall construction (W) being positioned down flatly upon the floor frame (V) in disassembled position receives the shore 16 completely in a free space formed between the edge profiles which results in the fact that the safety module construction after its disassembly on its top side comprises no parts of the shores (16, 17) protruding outside the framework of edge profiles, in order to make a number of safety module constructions easily stackable, e.g. for transport .

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7. Safety module construction according to claim 6, characterized in that the free space for receiving the shore is principally formed in an edge or in a reinforcement profile (14).

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8. Safety module construction according to claims 6 or 7, characterized in that the module in its disassembled position comprises a total height being equal to the accumulated thicknesses of the floor frame (V) and the wall construction (W).

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9. Safety module construction according to claim 6, characterized in that a locking element (19) is provided for on the circumferential profile (11, 12, 26) of the wall

construction (W) or upon an edge profile (1,2) of the floor frame (V) such that during disassembly and stacking upon each other of two safety module constructions, this locking element (19) fitted to the lower safety module construction extends until into the opening of a U-shaped profile of the safety module construction on top, thus preventing mutual displacement of stacked safety module constructions.

10. Safety module construction according to claim 5, characterized in that the bottom edge (12) of the wall construction (W) is provided with at least one downwardly extending guide element (27) and the floor frame (V) is provided with a guide channel (30) whereby the guide element (27) allowed to be displaced through the guide channel (30) during folding upward and downward respectively of the wall construction (W) in its mounted and disassembled position.

11. Safety module construction according to claim 10, characterized in that the wall construction (W) is provided with two guide elements (27) and the floor frame (V) is provided with two guide channels (30), whereby the two guide elements are mutually distantly spaced to such an extent, that during folding upwards and downwards respectively of the wall construction (W) the bottom edge (12) principally remains parallel to the longitudinal central axis of the floor frame (V).

12. Safety module construction according to claim 5, characterized in that the bottom edge (12) of the wall construction (W) is provided with at least one guide wheel (31) and that the floor frame (V) is provided with at least one guide rail (32), such that during the displacement of the bottom edge (12) of the wall construction (W) during its folding upward or downward respectively thereof the guide wheel rolls over the guide rail (32).

13. Safety module construction according to claim 12, characterized in that the bottom edge (12) of the wall construction (W) is provided with two mutually distantly spaced guide wheels (31) and with two mutually distantly spaced

guide elements (27) and whereby the floor frame is provided with two guide channels (30) and two guide rails (32), such that during upward or downward folding of the wall construction (W) the guide wheels (31) roll over the guide rails (32) and the guide elements (27) are moving through the guide channels (30).

14. Safety module construction according to claim 13, characterized in that the guide wheels (31) are mounted adjacent to the guide elements (27) and that accordingly the guide rails (32) are correspondingly mounted adjacent to the guide channels (30).

15. Safety module construction according to claim 14, characterized in that the guide wheels (31) and the guide elements (27) are mounted on both ends of the bottom edge (12) adjacent to the upright edge profiles (11) of the wall construction (W).

16. Safety module construction according to claim 15, characterized in that the guide rails (32) at their ends nearby the position of the bottom edge (12) of the wall construction (W) in its mounted position, is provided with recesses (33) for receiving the guide wheels (31), in such a way that in the mounted position of the wall construction (W) it is no longer supported by the guide wheels (31).

17. Safety module construction according to one or more of the preceding claims 10 - 16, characterized in that a locking element (31) is mounted on the rear side of the guide element (27) which locks the wall construction (W) in its mounted position against being folded down, or being pushed down.

18. Safety module construction according to claim 17, characterized in that the locking element (21) consists of a bolt and nut connection which also serves as a coupling with adjacent safety module constructions.

19. Safety module construction according to one or more of the preceding claims
10 - 18, characterized in that the guide element (27) comprises a hooked
element (28) that in its mounted position of the wall construction (W) has a
principally horizontal position and thereby extending until under a protruding
5 edge (29) of the floor frame (V) to prevent lifting up of the wall construction (W).
20. Safety module construction according to anyone of the preceding claims,
characterized in that the panel wall surface (15) consists of a number of closely
connected panel segments which are entirely received within the profile edge
10 circumference (11, 12, 26) of the wall construction (W) and which cannot be
removed therefrom without disassembling the wall construction.
21. Safety module construction according to anyone of the preceding claims,
characterized in that the bottom edge (12) of the floor frame (V) is provided with
15 openings (7, 8, 9, 10) at several locations around its outline for transport of the
module by means of a fork-lift truck.
22. Safety module construction according to anyone of the preceding claims,
characterized in that the upright edge profiles (11) of the wall construction are
20 provided with locking members for being mutually intercoupled with
corresponding locking members of an adjacent module construction.
23. Safety module construction according to anyone of the preceding claims,
characterized in that the width of the wall construction (W) is less then the width
25 of the floor frame (V) resulting in the fact that after intercoupling of two safety
module constructions an opening is created between adjacent wall
constructions (W).
24. Safety module construction according to anyone of the preceding claims,
30 characterized in that the wall construction (W) is provided with one or more
hoisting eyes (25) to allow for folding the wall construction (W) upward or
downward by means of hoisting means.

25. Safety module construction according to anyone of the preceding claims, characterized in that the bottom edge (12) of the wall construction (W) is provided at its bottom side with one or more stop elements (34) which stops
5 engage the longitudinal central profile of the floor frame (V) and so prevent folding down or pushing down the wall construction (W).

26. Safety module construction according to anyone of the preceding claims, characterized in that the top edge (26) of the wall construction (W) over its full
10 length is provided with a multi pointed anti clamber protectional device (22, 23).

27. Safety module construction according to one or more of the preceding claims, characterized in that the anti clamber protectional device (22, 23) consists of a hollow tube which at its circumference are provided with a number of separate
15 anti clamber elements longitudinally adjacent to each other, optionally rotatable around the hollow tube and whereby each anti clamber element consists of a hollow sleeve of a short length whereupon a sheet-shaped pointed (23) sheet parts are mounted in a circumferential direction.

20 28. Safety module construction according to one or more of the preceding claims, characterized in that a wall panel (15) is formed as a sandwich panel, which on both sides consists of sheet shaped metal having in between a fire-resistant layer.

25 29. Safety module construction according to claim 12, characterized in that the sandwich wall panels (15) are provided with an exterior aluminium sheet.

30. Safety module construction according to anyone of the preceding claims, characterized in that its dimensions in disassembled folded down position of
30 the frames (L x W x H) are: 350 x 255 x 230 cm.

31. Safety module construction according to claim 14, characterized in that in folded down position for storage the accumulated height of the floor and wall construction amounts to less than 2 x 10 cm by a length x width of 350 x 255 cm.
- 5
32. Safety module construction consisting of a horizontal floor frame (V) and a vertical wall construction (W) positioned thereupon having a completely closed wall construction surface (15), the bottom side (12) of the frame wall (W) being permanently and stable connected to the floor frame (V) and further both
- 10 frames (V and W) being performed according to anyone of the preceding claims 1-30.
33. Safety module construction according to anyone of the preceding claims, characterized in that the top side of the floor frame (V) at its front side is provided with a metal floor plate (S) mounted thereupon and being perforated or not.
- 15
34. Permanently upright safety module construction consisting of a horizontal floor frame construction (V) principally of a right angled configuration for positioning on the ground and which is provided with an upright safety frame, being
- 20 relatively high which forms a wall construction (W) for the purpose of keeping the public at a safe distance from an object and whereby the rear side of the upright wall construction (W) is shored with respect to the floor frame (V) by at least one shore (16, 17) under angled positioned whereof the top end is
- 25 connected to the top side of the wall construction (W) and whereof the lower end is connected to the floor frame nearby the rear edge profile (2)
35. Closed safety module fence construction, constructed from a number of mutually interlocked and being interconnected into a high fence of united safety
- 30 module constructions according to anyone of the preceding claims 1-34.

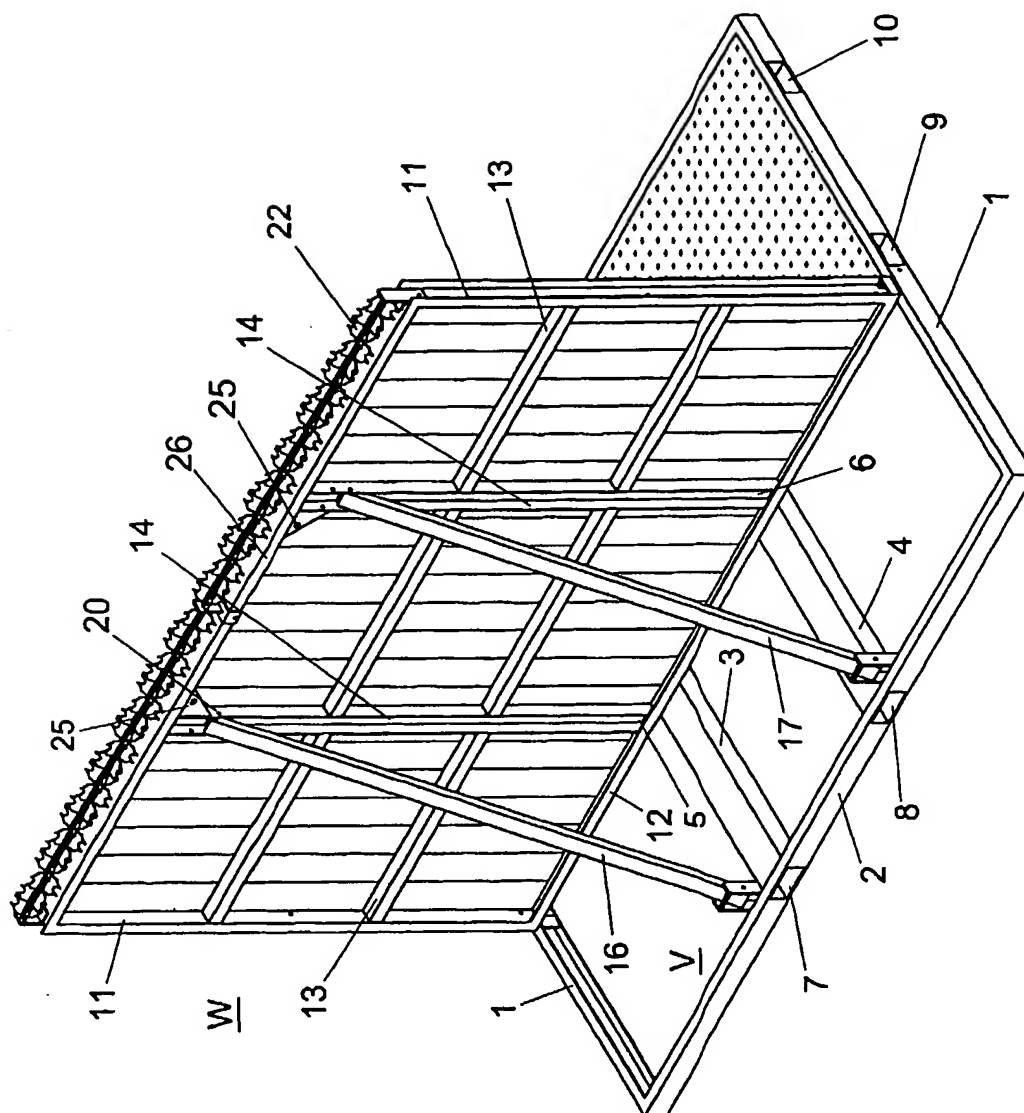


FIG. 1

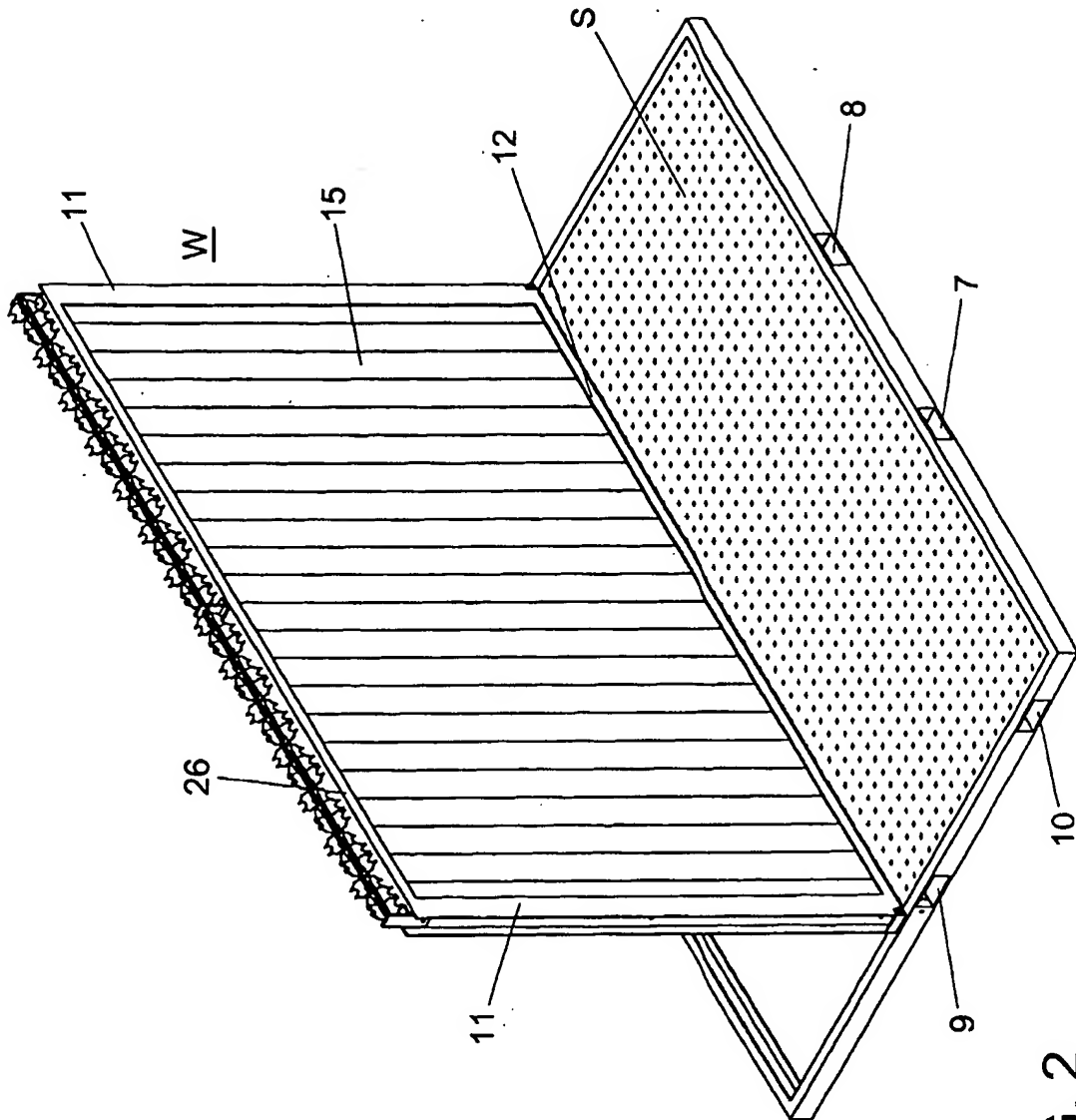
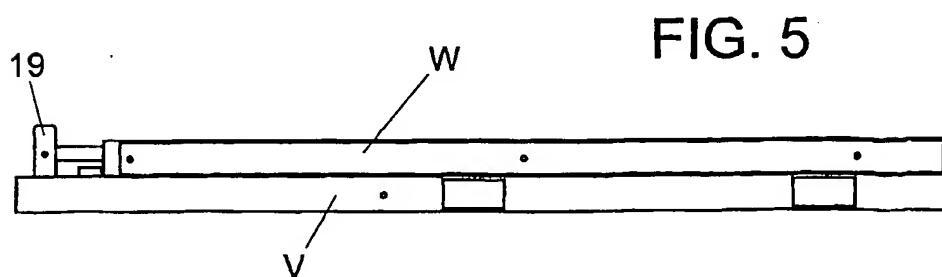
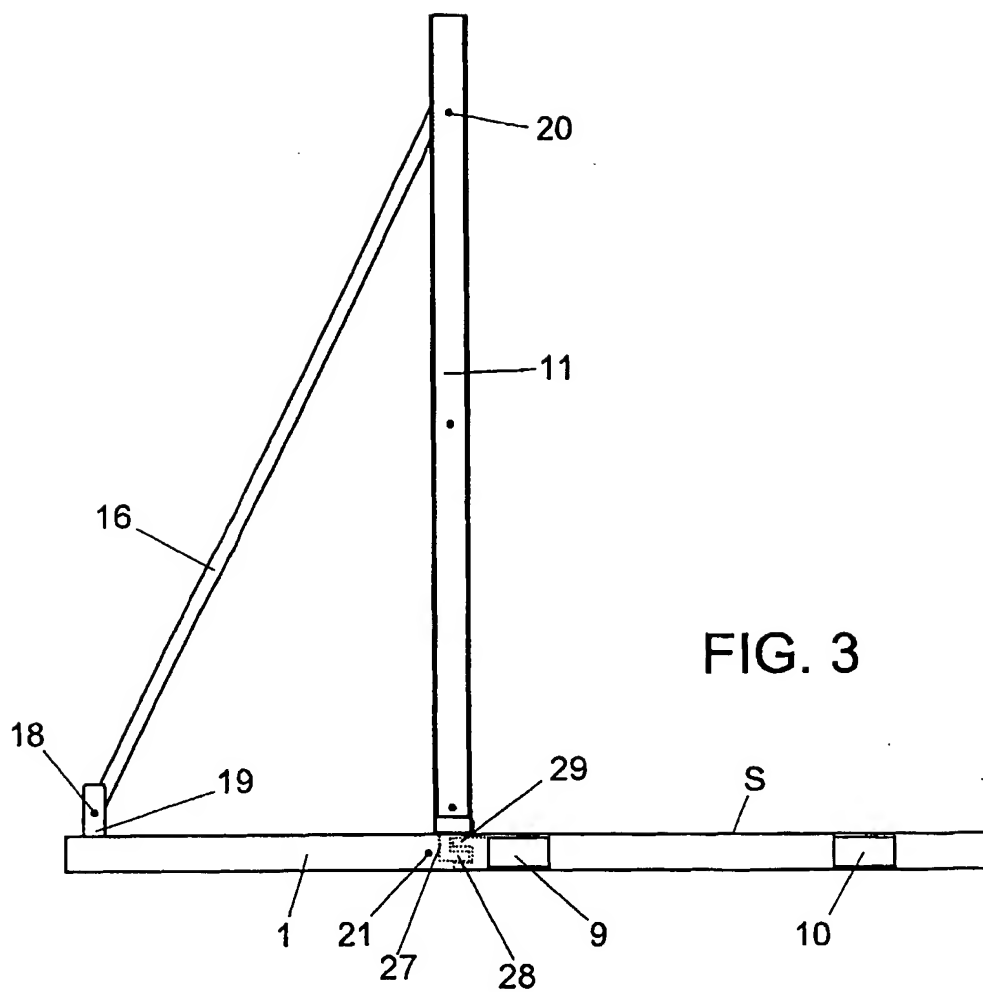
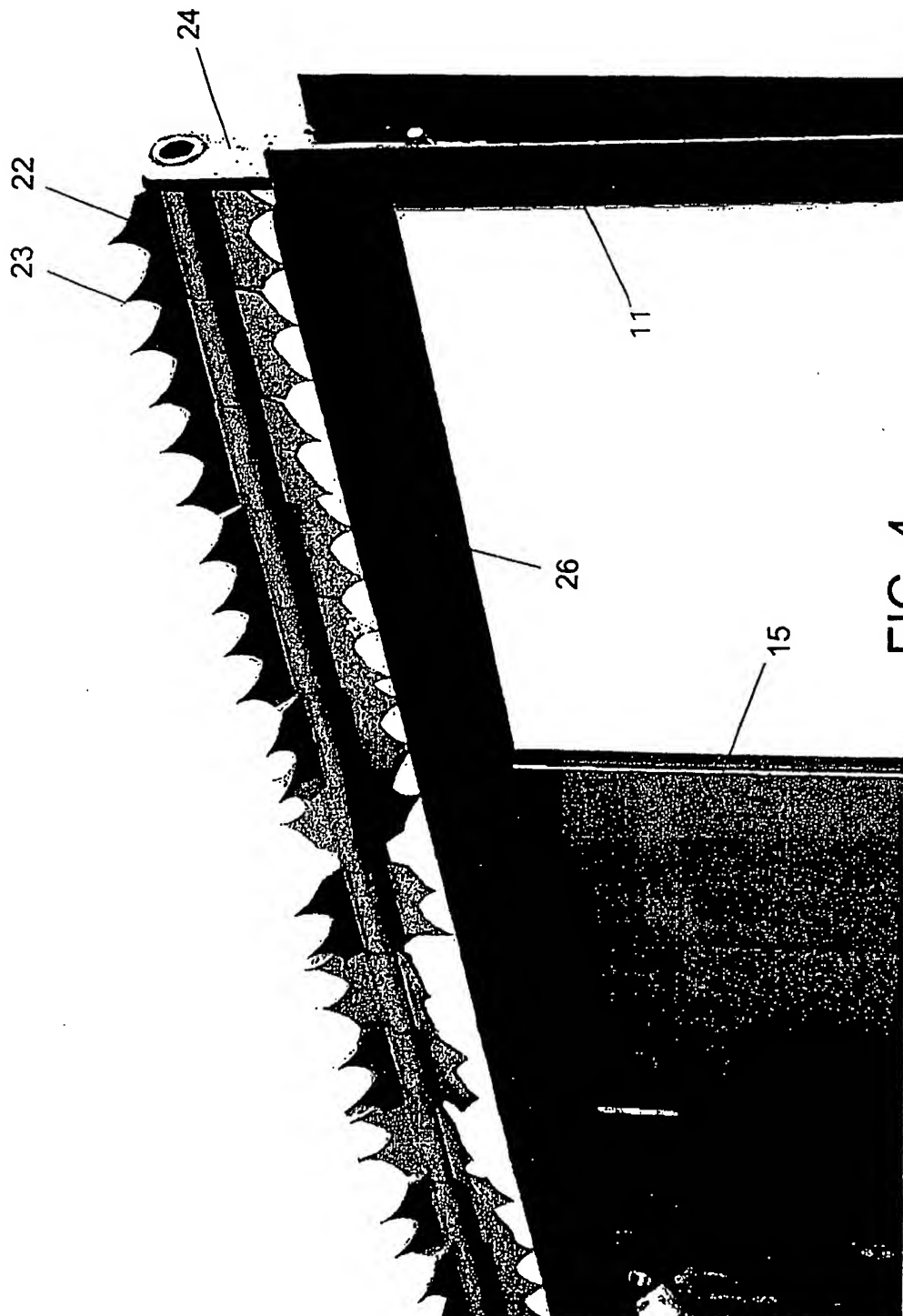


FIG. 2





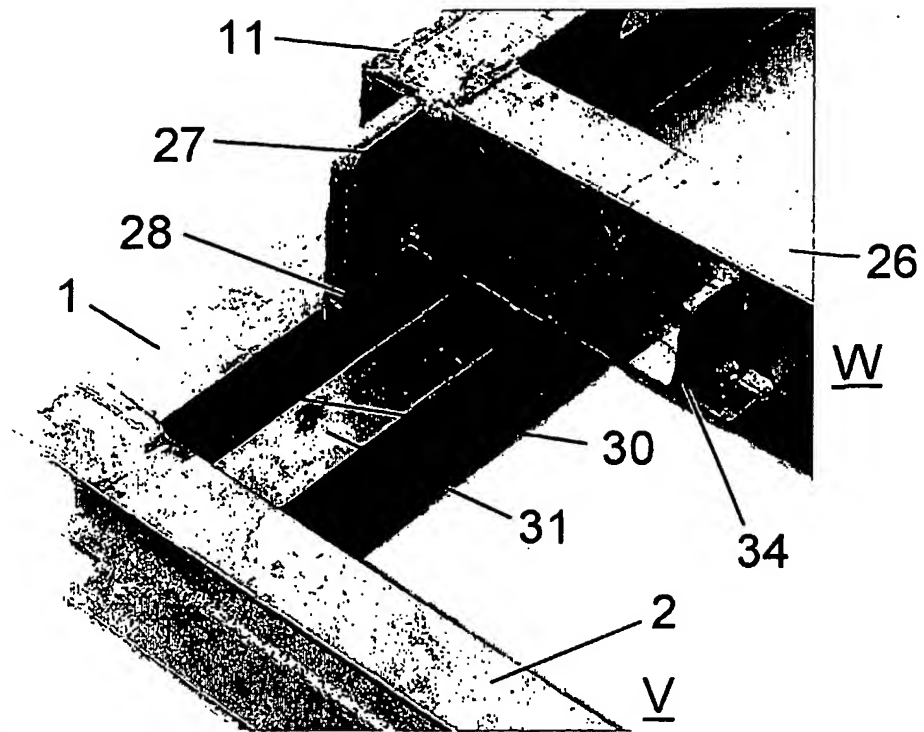


FIG. 6

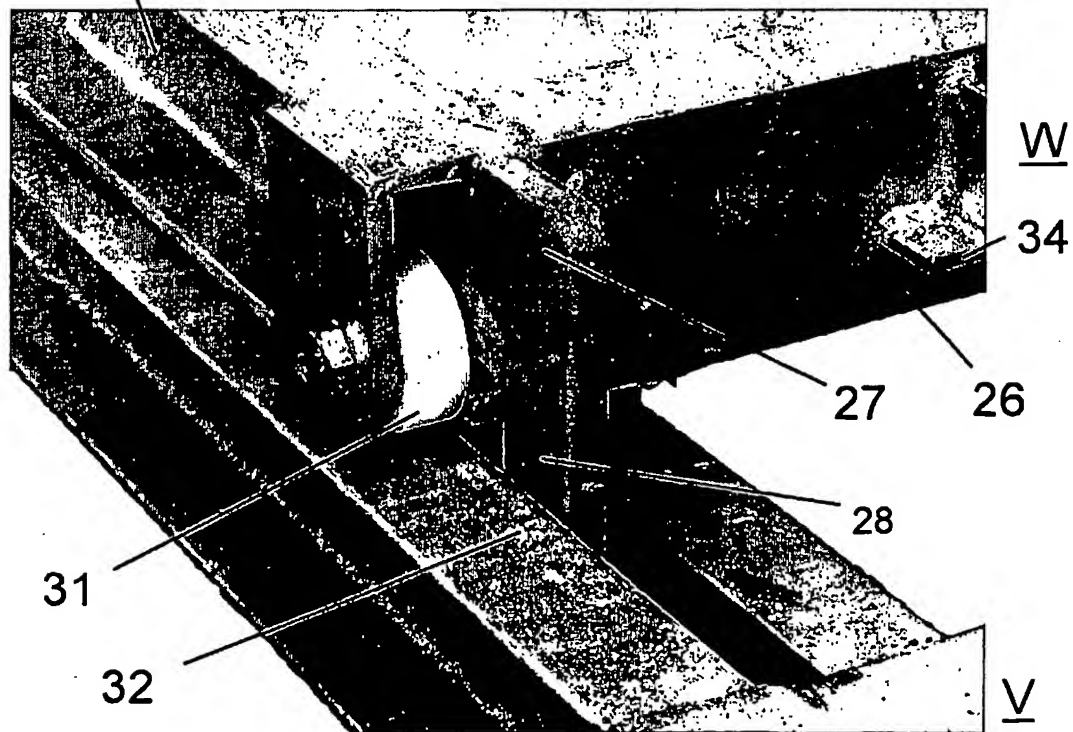


FIG. 7

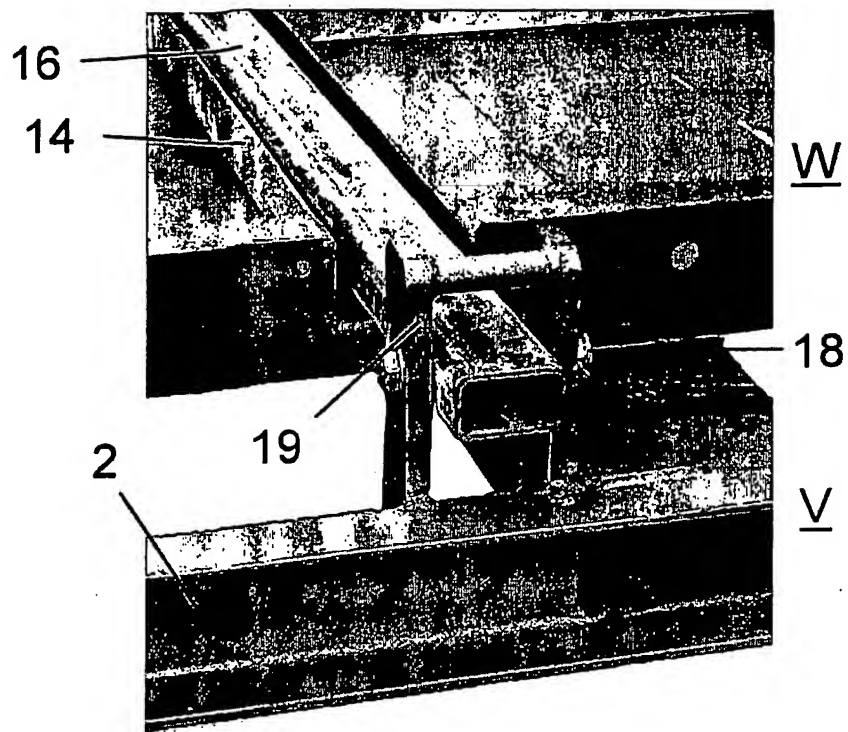


FIG. 8

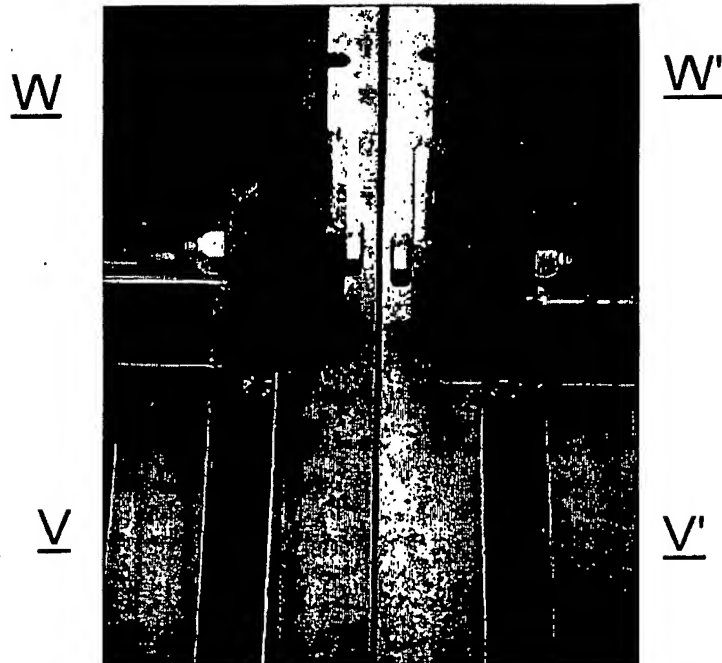
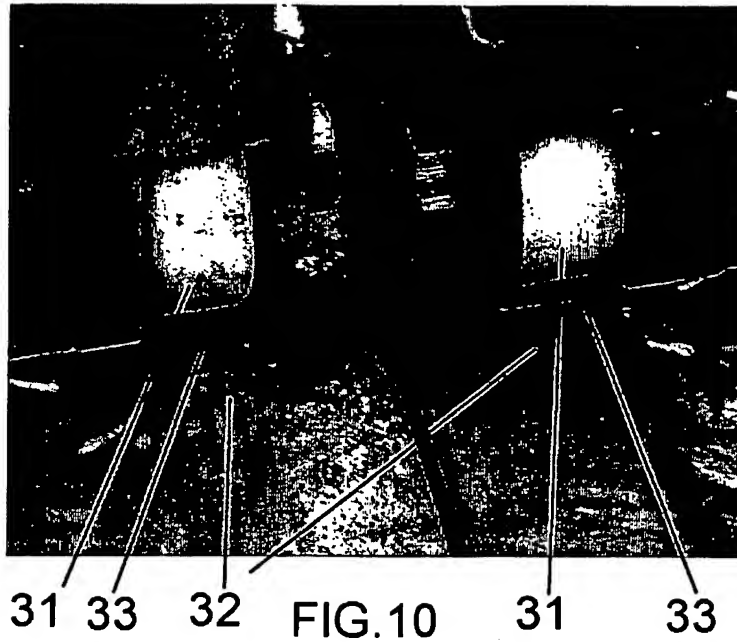


FIG. 9



International Application No
PCT/NL2004/000206

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 E01F13/02 E04H17/18

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 E01F E04H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 296 234 B1 (DE BOER ROBERT) 2 October 2001 (2001-10-02)	1-5, 20, 23, 24, 32-35
A	column 2, line 61 - column 4, line 24; figures 1-7	25, 29-31

X	US 2 499 859 A (HALTER HOWARD L) 7 March 1950 (1950-03-07)	1, 2, 23, 32, 33
A	column 2, line 1 - column 3, line 60; figures 1-4	3-6, 8, 30, 31, 34

X	GB 2 228 510 A (CLEANLINE FABRICATIONS) 29 August 1990 (1990-08-29)	32, 33
A	page 4, line 8 - page 7, line 10; figures 1-5	1-4, 8, 21, 22, 28, 30, 31, 34, 35

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

11 August 2004

Date of mailing of the international search report

30/08/2004

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Stefanescu, R

INTERNATIONAL SEARCH REPORT

International Application No
PCT/NL2004/000206

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>US 5 356 119 A (SCHOCK JOEL F) 18 October 1994 (1994-10-18)</p> <p>column 3, line 19 -column 4, line 42; figures 1-6</p> <p>-----</p>	<p>1-5,8,9, 21-24, 30-32, 34,35</p>
A	<p>AU 521 951 B (BUTLER C) 8 April 1982 (1982-04-08) page 4, line 15 -page 7, line 18; figures 1-7</p> <p>-----</p>	<p>11-16</p>

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/NL2004/000206

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US 2499859	A	07-03-1950	NONE	
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US 5356119	A	18-10-1994	NONE	
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